MOULDS.

By David R. Sumstine.

It is not necessary to go to the fields and the forest in search of plants. The kitchen, the cupboard, the cellar, the manure heap about the barn, the decaying vegetable matter about the garden or about the house have a distinctive flora as interesting as the flora of field and forest. The plants of the latter flora are more conspicuous, but the plants of the former flora are just as beautiful and have just as interesting life history and in the economy of nature are just as useful.

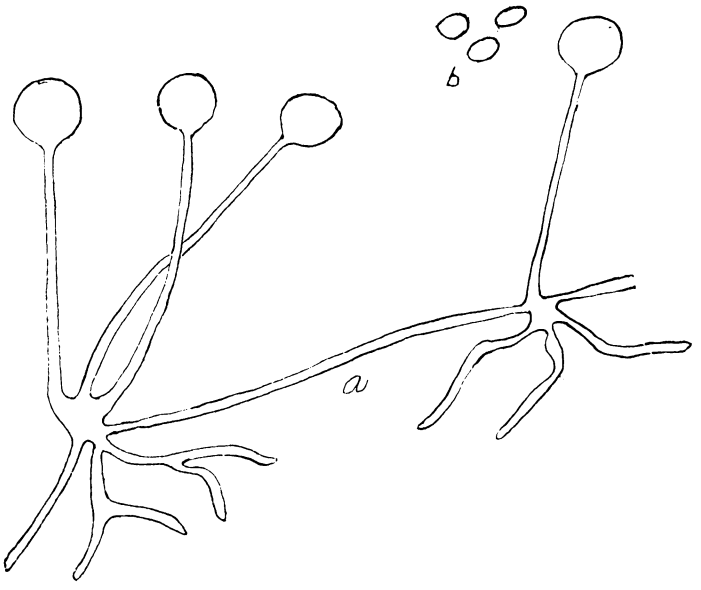
There are many genera and species represented in this flora but only a few belonging to the family *Mucoraceae* will be discussed at this time.

These plants are commonly called *Moulds,* but all the so-called Moulds do not properly belong to this family. This is especially true of the common green mould found on canned fruit. It belongs to an entirely different family.

A piece of bread or sweet potato laid in a moist place for a few days will produce plenty of specimens for study. It seems that the spores of moulds float in the air and fall upon various substances. Whenever the proper conditions of temperature and moisture are supplied the spores germinate and develop. The spores retain the power of germination for a long time.

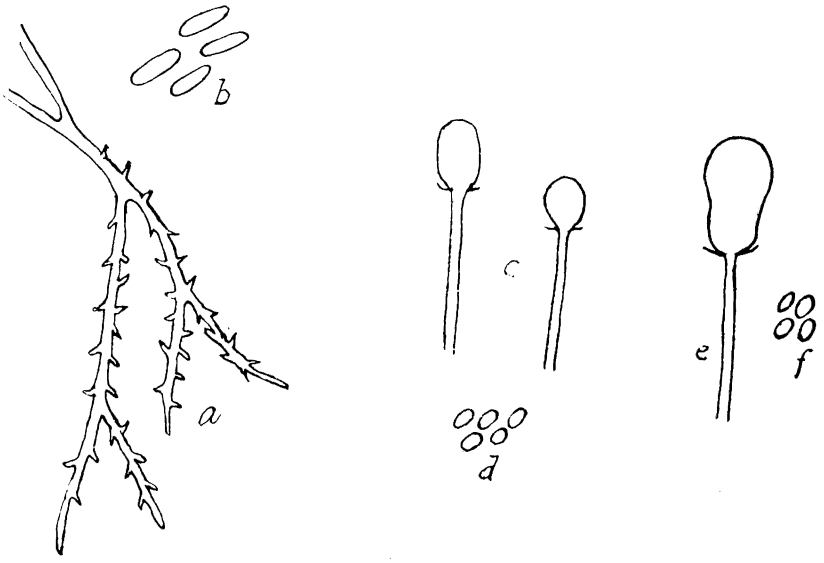
A little observation will show the thread like mycelium spreading in and upon the substratum. At different parts of the mycelium *sporangiophores* arise. At the top of the sporangiophores are developed the sporangia containing spores.

The following species can be found almost anywhere during the summer months:



Mucor mucedo. a Sporangiophores. b Spores.

Fig. 246. Illustrations of Moulds.



a Spinulose mycelium of Mucor fusiger. b Spores of same. c Columella of Mucor stercoreus. d Spores of same. e Columella of Phycomyces nitens. f Spores of same.

FIG. 247. ILLUSTRATIONS OF MOULDS.

MUCOR.

This genus is characterized by simple or branched, but not dichotomously branched, sporangiophores. The membrane of the sporangium is not cuticularized and soon disappears. The sporangia are of one kind and are furnished with columella.

MUCOR MUCEDO LINNAEUS.

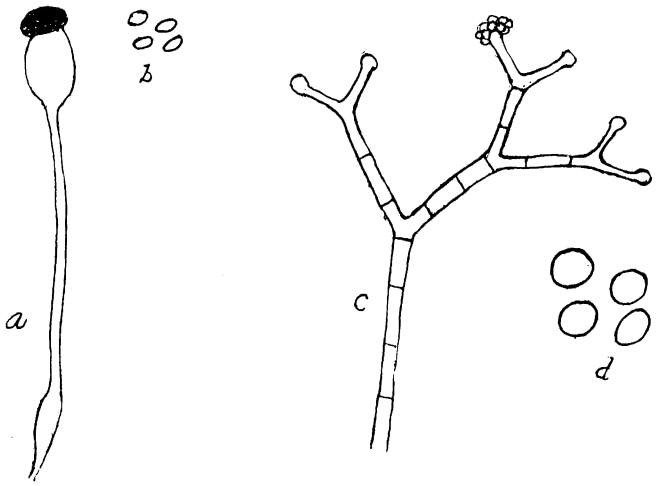
The mycelium is white at first, then brown or even black. The sporangiophores are usually in clusters of three or more, reaching 5 mm. in height. The columella is very prominent, but finally collapses. The spores are globose, oval or irregular. This is the common black mould of bread. The following names are also given to this species, *Mucor stolonifer, Rhizopus nigricans.*

MUCOR STERCOREUS (TODE) LINK.

The sporangiophores are erect, undivided, gray: the sporangia are large, yellowish, brownish when old; the membrane disappears and leaves a collar at the base; the columella is variously shaped, cylindrical or conical; spores somewhat elliptical. It grows on dung. *Mucor mucedo* Fresenius has also been applied to this mould.

MUCOR FUSIGER LINK.

The sporangiophores are simple, erect, bulbous below, but attenuated upwards, gray to brown in color; columella is large; spores spindle shaped; the aerial mycelium is divided into thorny branches. It grows on Agarics.



a Sporangiophore of Pilobolus crystallinus. b Spores of same. c Sporangiophores of Sporodinia aspergillus. d Spores of same.

FIG. 248. ILLUSTRATIONS OF MOULDS.

PHYCOMYES.

In general appearance the species of this genus resemble the species of *Mucor*. The chief difference is in the formation of zygospores. The metallic appearance will generally separate it from *Mucor*.

PHYCOMYCES NITENS (AGARDH) KUNZE.

The sporangiophores are simple, olive brown, very large, 7-30 cm. long; the sporangia are round, large; columella, pear shaped; spores ellipsoid. It grows on oily substances. Ground flax seed makes a good medium for cultivation.

PILOBOLUS.

This genus is easily recognized by the peculiar formation of the sporangium whose upper part is cuticularized. The sporangiophore is very much enlarged or distended right below the sporangium.

PILOBOLUS CRYSTALLINUS (WIGGERS) TODE.

This is common on horse dung. The sporangium is black and at maturity is thrown off with considerable force; the spores are colorless or yellowish.

SPORODINIA.

This is a monotypic genus and is known by the dichotomously branched sporangiophores.

SPORODINIA ASPERGILLUS (SCOPOLI) SCHROETER.

The sporangia are variously colored, but usually brown or black at maturity. The spores are round or ellipsoid. It grows on Boleti and Agarics.

All figures were drawn by Stella Sumstine, not to any definite scale.

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